

Multiple Choice Quiz 3

Spinal Musculoskeletal Injuries Associated with Swimming:

A Discussion of Technique

1. In regards to the pull phase in freestyle, which two muscle groups are most dominant?
☐ a. abductors & external rotators
☐ b. adductors & internal rotators
☐ c. adductors & external rotators
☐ d. abductors & internal rotators
2. Of the four swimming strokes, which one is biomechanically unique in both upper and lower extremity motion?
☐ a. freestyle
☐ b. backstroke
☐ c. breaststroke
☐ d. butterfly
3. Which type of drag (water resistance) is minimized by the use of swim suits?
☐ a. wave drag
☐ b. form drag
☐ c. frictional drag
☐ d. none of the above
4. According to the article, perhaps the greatest difference between elite and novice swimmers is:
☐ a. upper body muscle mass
☐ b. body fat
☐ c. lack of body roll
☐ d. arm span
5. In the normal shoulder, which muscles perform the greatest work and are most likely to fatigue?
☐ a. pectoralis minor & rhomboids
☐ b. latissimus dorsi & upper trapezius
☐ c. serratus anterior & teres minor
☐ d. infraspinatus & levator scapula
6. Which two swimming strokes are most likely to hyperextend the neck?
☐ a. freestyle & backstroke
☐ b. breaststroke & butterfly
☐ c. freestyle & butterfly
☐ d. breaststroke & backstroke
7. Eye-head-neck coordination training is recommended for those who suffer:
☐ a. shoulder injuries
☐ b. thoracic spine injuries
☐ c. neck injuries
☐ d. none of the above
8. Spinal stability exercises require an emphasis on:
☐ a. strength
☐ b. endurance
☐ c. power
☐ d. flexibility
9. Which two muscles can be stressed throughout a region of the tendons referred to the avascular zone?
☐ a. infraspinatus & teres minor
☐ b. subscapularis & pectoralis major
☐ c. supraspinatus & biceps tendon
☐ d. all of the above
10. In the propulsive phase, swimmers with painful shoulders have been found to recruit which muscle more so than non-injured swimmers?
☐ a. middle trapezius
☐ b. rhomboid
☐ c. serratus anterior
☐ d. levator scapula

Henry Pollard & Matt Fernandez

This quiz has been accredited by COCA at: **one(1), category "1" point.**

This multiple choice quiz is based on an article in this issue. Please read each of the above questions carefully and place an "X" in the box of the corresponding correct answer. Please note that there is only one correct answer to each question. Then provide your NAME where indicated below, remove this page and return to: COCA, PO Box 1010, RINGWOOD VIC 3134.

NAME: _____